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# Developing a New Swiss Research Centre for Barrier-Free Communication

Pierrette Bouillon, Silvia Rodríguez Vázquez, Irene Strasly

Department of Translation Technology, FTI, University of Geneva, Switzerland

{pierrette.bouillon|silvia.rodriguez|irene.strasly}@unige.ch

## Abstract

The project ‘Proposal and Implementation of a Swiss Research Centre for Barrier-free Communication’ (BFC) is a four-year project (2017–2020) funded by the Rectors' Conference of Swiss Higher Education Institutions (*swissuniversities*).<sup>1</sup> Its purpose is to ensure that individuals with a visual or hearing disability, people with a temporary cognitive impairment and speakers without sufficient knowledge of local languages can communicate and enjoy barrier-free access to information in all spheres of life, with a special focus on higher education.

## 1 The Project

In Switzerland, the principles of equality, non-discrimination and social inclusion are advocated at a federal and cantonal level. However, educational qualification rates continue to be extremely low among hearing and visually impaired individuals in particular, with numbers below 1% in the case of tertiary education. The work conducted within the framework of the Barrier-free Communication (BFC) project, a joint effort between the Zurich University of Applied Sciences and the University of Geneva, aims at developing new guidance and technological resources for teaching and administrative staff of higher institutions with disabilities. A total of ten research areas revolving around language resources and technology have been defined. These include, among others, audio description,

life subtitling, easy-to-read and plain language, multilingual web accessibility and speech to sign language translation. In the context of this last research area, a use case has been developed in collaboration with the Geneva University Hospitals (HUG).

## 2 BabelDr: A speech to sign translation system for anamnesis

Today, hospitals have to increasingly deal with patients who have no language in common with the staff. BabelDr ([babeldr.unige.ch](http://babeldr.unige.ch)) was elaborated to specifically address this issue. The system can be characterized as a flexible speech-enabled fixed-phrase translator (Bouillon et al., 2017). The set of sentences are limited, but the user can speak freely, which improves usability. As in a translation memory, the system will map the doctor's question to the closest match, using different matching techniques. The key features are: (i) security (data are stored locally), (ii) reliability (translations have been done by humans or interpreters with an on-line platform), and (iii) flexibility (source content and translations can be easily added, in different formats, written or oral/aural). The actual sign language version was developed for LSF-CH (Swiss-French Sign Language) in collaboration with a deaf nurse and a professional hearing sign language interpreter in professional conditions. BabelDr will be tested in real settings at HUG in the summer. The existing version for spoken languages contains 7 domains which cover the most frequent health issues, with around 3500 sentences per domain.

## References

Bouillon, Pierrette *et al.* 2017. BabelDr vs Google Translate: a user study at Geneva University Hospitals (HUG). *20th Annual Conference of the European Association for Machine Translation (EAMT)*. Prague, Czech Republic 47–52.

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<sup>1</sup> <https://www.swissuniversities.ch/en/organisation/>